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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/603,062	06/26/2000	Beong-Jo Kim	678-505 (P9425/IMT)	3341
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DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			EXAMINER TRAN, THIEN D	
			ART UNIT 2616	PAPER NUMBER

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/603,062

Applicant(s)

KIM ET AL.

Examiner

Thien D. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7,8 and 10-20 is/are rejected.
- 7) ☒ Claim(s) 2,5,6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/13/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1, 3, 4, 7, 8, 10-16, 19, 20 are rejected under 35 U.S.C. 102(e) as being participated by Narvinger et al (U.S Patent No. 6,868,075 B1).

Regarding claim 1, Narvinger discloses a channel coding and multiplexing apparatus in a CDMA communication system, in which data frames that may have different slot (transmission time intervals) are received in parallel, col.6 line 6, via a plurality of transport channels and multiplexed to form a serial data frame, figure 16, the apparatus comprising:

a number of radio frame matchers, the number of radio frame matchers being at least equal to the number of the transport channels for coding, figure 16, col.9 lines 1-5, each radio frame matcher having a radio frame segmenter for receiving the data frames and segmenting the data frames into radio frames, figure 16, col.13 lines 4-10; and

a multiplexer for multiplexing the radio frames to form the serial data frame, col.12 lines 55-63.

Regarding claims 3, 10, Narvinger discloses that each radio frame matcher further includes an interleaver, col.13 lines 1-5, for interleaving the data frames received by the corresponding frame matcher and applying the interleaved data frame to a corresponding radio frame segmenter, col.13 lines 4-10.

Regarding claims 4, 11, Narvinger discloses that each radio frame matcher further includes a rate matcher for adjusting the data rate of a radio frame received from a radio frame segmenter by one of puncturing and repeating parts of the radio frame to match the data rate of the radio frame to that of a physical channel frame, col.13 lines 20-25.

Regarding claim 7, Narvinger discloses a channel coding and multiplexing apparatus in a CDMA communication system, in which data frames that have one or more transmission time intervals (TTIs) are received in parallel via a plurality of transport channels, col.6 line 6, and converted to data frames of multi-code physical channels, figure 16, the apparatus comprising:

- a number of radio frame matchers, the number of radio frame matchers being at least equal to the number of transport channels, figure 16, col.9 lines 1-5, each radio frame matcher having a radio frame segmenter for receiving the data frames and segmenting the data frames into radio frames, col.13 lines 4-10;

- a multiplexer for multiplexing the radio frames to form the serial data frame, col.12 lines 55-63; and

a physical channel segmenter for segmenting the serial data frame by the number of the physical channels and outputting the segmented physical channel frames to corresponding physical channels, col.13 lines 4-10.

Regarding claim 8, Narvinger discloses a channel coding and multiplexing apparatus in a CDMA communication system, in which data frames that have one or more transmission time intervals (TTIs) are received in parallel via a plurality of transport channels and multiplexed to a serial data frame, col.13 lines 4-10, the apparatus comprising:

a number of radio frame matchers, each of the radio frame matchers is configured for determining the number of filler bits and inserting the determined number bits filled in the repeated frame (one of the filler bits into one of the data frames), col.17 lines 35-45, and each of the radio frame matchers having a radio frame segmenter for receiving the a data frames and for segmenting the data frames having the filler bit into radio frames, figure 16; and

a multiplexer for multiplexing the radio frames to form the serial data frame, col.12 lines 55-63,

Regarding claim 12, Narvinger discloses a channel coding and multiplexing apparatus in a CDMA communication system, in which data frames that have one or more transmission time intervals (TTIs) are received in parallel via a plurality of transport channels and converted to CDMA data frames (multi-code physical channels), figure 16, the apparatus comprising:

a number of radio frame matchers, each of the radio frame matchers determining the number of filler bits and inserting the determined number bits filled in the repeated frame (one of the filler bits into one of the data frames), col.17 lines 35-45, and each of the radio frame matchers having a radio frame segmenter for receiving a data frame the data frames and for segmenting the data frames having the filler bit into radio frames, figure 16;

a multiplexer for multiplexing the radio frames to form a serial data frame, col.12 lines 55-63; and

a physical channel segmenter for segmenting the multiplexed serial data frame by the number of the physical channels and assigning the segmented physical channel frames to corresponding physical channels, col.13 lines 4-10.

Regarding claim 13, Narvinger discloses a channel coding and multiplexing method in a CDMA communication system in which data frames that have one or more transmission time intervals (TTIs) are received in parallel via a plurality of transport channels and multiplexed to form a serial data frame, figure 16, the method comprising the steps of:

receiving data frames and segmenting the data frames into radio frames in a number of radio frame matchers, col.13 lines 4-10, the number of radio frame matchers being at least equal to the number of the transport channels, figure 16; and

multiplexing the radio frames to form the serial data frame, col.12 lines 55-63.

Regarding claim 14, Narvinger discloses a channel coding and multiplexing method in a CDMA communication system, in which data frames that have one or more

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transmission time intervals (TTIs) are received in parallel via a plurality of transport channels and converted to data frames of CDMA (multi-code physical channels), figure 16, col.5 line 52, the method comprising the steps of:

receiving data frames and segmenting the data frames into radio frames in a number of radio frame matchers, the number of radio frame matchers being at least equal to the number of the transport channels, col.13 lines 4-10, figure 16;

multiplexing the radio frames to form a serial data frame, col.12 lines 55-63;

segmenting the serial data frame by the number of the physical channels, figure 16; and

outputting the segmented physical channel frames to corresponding physical channels, figure 16.

Regarding claim 15, Narvinger discloses a channel coding and multiplexing method in a CDMA communication system in which data frames that have one or more transmission time intervals (TTIs) are received in parallel via a plurality of transport channels and multiplexed to form a serial data frame, figure 16, the method comprising the steps of:

receiving data frames, figures 1;

determining a number of filler bits, col.17 line 45;

inserting the filler bits into the data frames, col.17 line 40;

segmenting the data frames including the filler bits into radio frames in a number of radio frame matchers, the number of radio frame matchers being at least equal to the number of transport channels, col.13 lines 4-10; and

multiplexing the radio frames to form the serial data frame, figure 16.

Regarding claim 16, Narvinger discloses a channel coding and multiplexing method in a CDMA communication system, in which data frames that have one or more transmission time intervals (TTIs) are received in parallel via a plurality of transport channels and converted to CDMA data frames (multi-code physical channels), figure 16, the method comprising the steps of:

receiving data frames, figure 1;

determining a number of filler bits, col.17 line 45;

inserting the filler bits into the data frames, col.17 line 40;

segmenting the data frames including the filler bits into radio frames in a number of radio frame matchers, the number of radio frame matchers being at least equal to the number of transport channels, col.13 lines 4-10;

multiplexing the radio frames to form a serial data frame, col.12 lines 55-63;

segmenting the serial data frame by the number of the physical channels, figure 16; and

assigning the segmented physical channel frames to the corresponding physical channels, figure 16.

Regarding claim 19, Narvinger discloses a channel coding and multiplexing apparatus in a CDMA communication system, in which data frames that have one or more transmission time intervals (TTIs) are received in parallel via a plurality of transport channels and converted to data frames of multi-code physical channels, the apparatus comprising:

a plurality of radio frame matchers, each of the radio frame matchers for determining a number of filler bits and inserting the determined number of the filler bits into the data frames and each of the radio frame matchers, col.17 line 45, each of the radio frame matchers comprising a radio frame segmenter for receiving the data frames and for segmenting the data frames having the filler bit into radio frames, col.13 lines 4-10; and

a multiplexer for multiplexing the radio frames to form a serial data frame, col.12 lines 55-63, wherein the number of filler bits is determined such that the filler bit inserted data frames can be segmented into equally sized radio frames, col.12 line 65.

Regarding claim 20, Narvinger discloses a channel coding and multiplexing method in a CDMA communication system in which data frames that have one or more transmission time intervals (TTIs) are received in parallel via a plurality of transport channels and multiplexed to form a serial data frame, figure 16, the method comprising the steps of:

receiving data frames, figure 1;

determining a number of filler bits, col.17 line 45;

inserting the filler bits into the data frames, col.17 line 40;

segmenting the data frames including the filler bits into radio frames in a number of radio frame matchers, the number of radio frame matchers being at least equal to the number of transport channels, figure 16; and

multiplexing the radio frames to form the serial data frame, wherein the number of filler bits is determined such that the filler bit inserted data frames can be segmented into equally sized radio frames, col.12 line 65.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narvinger et al (U.S Patent No. 6,868,075 B1) in the view of Sakoda et al (U.S Patent No. 6,381,234 B2).

Regarding claims 17, 18, Narvinger discloses the multiplexing, matcher and segmenter at the CDMA transmitting device for processing radio frames for transmitting, figure 16.

Narvinger does not disclose the demultiplexing, dematcher and desegmenter for processing the received radio frames at the receiving device. However, Sakoda discloses radio frames being demodulated at the receiving device have radio frame demodulated circuits being at least equal to the number of transport channels, figure 10. Therefore, it would have been obvious to one having ordinary skill in the art to have the demultiplexing, dematcher and desegmenter for processing the received radio frames at

the receiving device so that the radio frame can be demodulated properly at the receiving device.

Allowable Subject Matter

4. Claims 2, 5, 6, 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Thien Tran whose telephone number is (571) 272-3156. The examiner can normally be reached on Monday-Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To, can be reached on (571) 272-7629. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

Patent Examiner

Thien Tran

A handwritten signature in black ink, appearing to read 'Doris H. To', with a large loop at the top and a trailing flourish.

DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600